

299-W22-86 (C4971)
Log Data Report

Borehole Information:

Borehole: 299-W22-86 (C4971)		Site: 200-UP-1			
Coordinates (WA St Plane)		GWL¹ (ft): 233.5		GWL Date: 3/16/06	
North Not available	East Not available	Drill Date 03/06	Ground Level Elevation Not available	Total Depth (ft) 350	Type Becker

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel	?	6.24	6.0	0.12	?	350
Steel	3.0	9.0	8.0	0.50	3.0	350

Borehole Notes:

The Becker drilling system uses a dual-wall casing. Air is forced down the annulus and cuttings are returned inside the inner casing. Total wall thickness is 0.620 in., increasing to 1.115 in. at the casing joints that occur at 10-ft intervals. The casing dimensions are derived from published values for Becker drill casing. Logging data acquisition is referenced to the ground surface.

Logging Equipment Information:

Logging System: Gamma 4A	Type: SGLS (35%) SN:34TP20893A
Effective Calibration Date: 05/11/05	Calibration Reference: DOE-EM/GJ891-2005
Logging Procedure: MAC-HGLP 1.6.5, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2	3 Repeat
Date	03/16/06	03/16/06	03/16/06
Logging Engineer	Spatz	Spatz	Spatz
Start Depth (ft)	348.0	182.0	35.0
Finish Depth (ft)	182.0	1.0	1.0
Count Time (sec)	NA	NA	NA
Live/Real	R	R	R
Shield (Y/N)	N	N	N
Sample interval (ft)	1.0	1.0	1.0
ft/min	1.0	1.0	1.0
Pre-Verification	DA131CAB	DA131CAB	DA131CAB
Start File	DA131000	DA131167	DA131349

Log Run	1	2	3 Repeat	
Finish File	DA131166	DA131348	DA131383	
Post-Verification	DA131CAA	DA131CAA	DA131CAA	
Depth Return Error (in.)	NA	LOW 2.0	0.0	
Comments	Fine-gain adjustment made at bottom of borehole, and after file 006. Computer lock-up.	Started new log run after computer lock-up. No fine-gain adjustments.	Repeat section. No fine-gain adjustments.	

Logging Operation Notes:

Pre- and post-survey verification measurements were acquired in the Amersham verifier, SN 115. A centralizer was installed on the sonde during logging. Maximum borehole depth achieved was 348.3 ft, before sonde un-weighted.

Analysis Notes:

Analyst:	Pope	Date:	08/02/06	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging system were performed before and after data acquisition. Acceptance criteria were met for the verification spectra, except for the resolution (full-width at half-max [FWHM]) of the 609 keV peak for both the pre- and post-run spectra, which are approximately 15% and 16% above the upper-control limit, respectively. The resolutions and count rates of the 1460 and 2614 keV energy peaks are within control limits. Examination of the gamma energy spectra indicates that detector efficiency is within acceptance criteria, but that energy resolution may have been somewhat degraded. The high FWHM values reported for the 609 keV peak are due, at least in part, to the curve-fitting algorithm used to process the spectra. The verification spectra are provisionally accepted.

Casing thickness (additive for the 6- and 9-in. casings) is approximately 0.620 in. The combined thickness at casing joints is 1.115 in. This thickness results in a significant reduction in gamma activity detection as the detector passes by a casing joint. However, it is not practical to correct individual data points for the effect of casing joints. The influence of the thick joints is apparent on the total gamma plot, where reduced count rates are exhibited at approximately 10-ft depth intervals.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to extract the total gamma count rate from individual files. No corrections are made for dead time, casing, or water.

Log Plot Notes:

Log plots are provided for the total gamma and dead time. A repeat log section is also presented.

Results and Interpretations:

A decrease in gamma activity occurs at each casing joint, where the increase in wall thickness results in greater attenuation of gamma activity. No anomalous gamma activity was observed. This observation suggests no significant concentrations of man-made radionuclides.

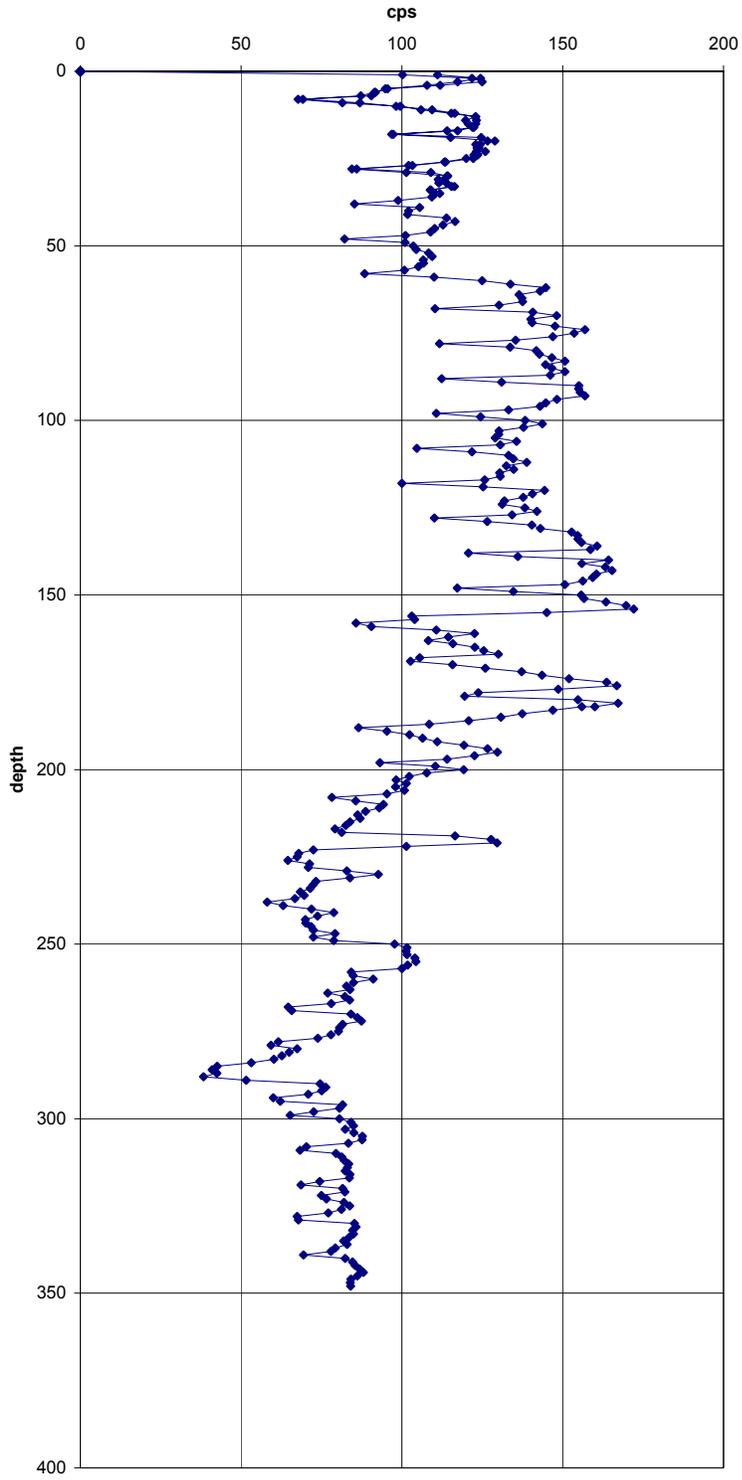
The repeat section indicated good agreement of the total count rate.

¹ GWL – groundwater level

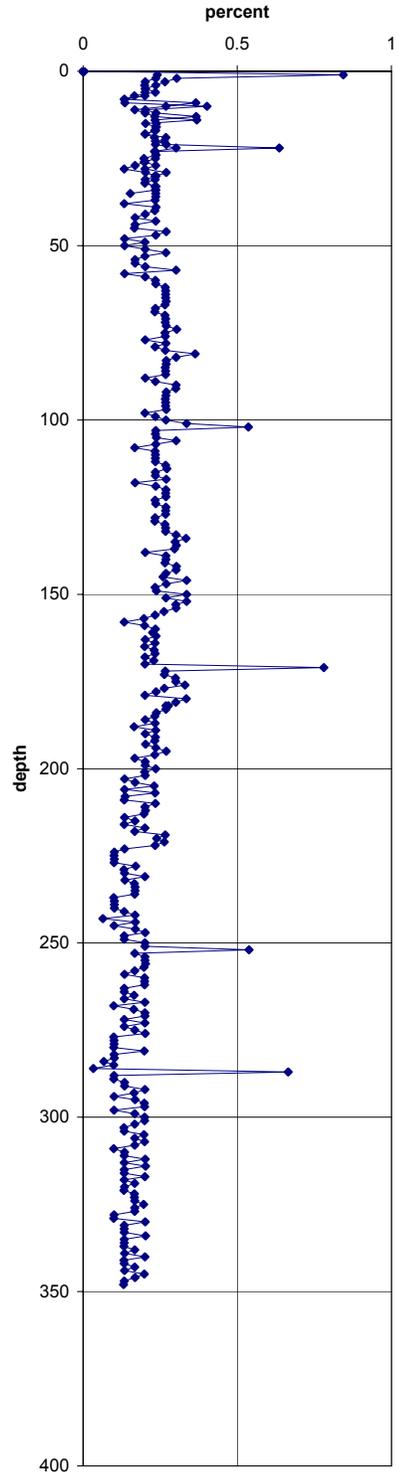
² N/A – not applicable

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Total Gamma



Dead Time



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Repeat Section

